Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1 (previously presented). Instrument for non invasive measurement of a three-dimensional distribution of temperatures of dielectric objects, with the inclusion of human organs or other biological tissues, the instrument comprising sensors to determine the electromagnetic heat emission power data in a frequency range between radio wave radiation and infrared radiation, said sensors being mounted on supports, said supports being adjustable and movable in space, said sensors being positionable along pre-established directions to determine said three dimensional distribution of temperature, said instrument including a data storage and calculation system having an interface with said sensors, said electromagnetic heat emission power data measured by said sensors being sent through said interface to said data storage and calculation system, said data storage and calculation system producing as output a three-dimensional map of said temperature distribution.

2 (previously presented). Instrument for non invasive measurement according to claim 1 wherein the map is in the form of a table.

3 (previously presented). Instrument for non invasive measurement according to claim 1 wherein the map is displayed on a screen.

4 (previously presented). Instrument for non invasive measurement according to claim 1 wherein the map is in the form of a thermal map.

5 (previously presented). A non invasive method of measuring three-dimensional distribution of temperature of dielectric objects using an instrument of the type according to claim 1 comprising the steps of reconstructing point temperatures using Rayleigh-Jeans equations, and expressing said temperature distribution through Fridgolm integrals, said three dimensional temperature distribution being based upon models linking emission intensities and said temperature distribution through said Fridgolm integrals.

6 (previously amended). A non invasive measurement method according to claim 5 further comprising the step of recording thermometric data automatically.

7 (previously amended). A non invasive measurement method according to claim 5 further comprising the step of using said three dimensional temperature distribution for medical-diagnostic purposes, on human internal organs.

8 (previously presented). A non invasive measurement method according to claim 5 further comprising the step of manually determining topological parameters for sensor handling working on gradually increasing or decreasing wave lengths.

9 (previously presented). A non invasive measurement method according to claim 5 further comprising the step of handling the sensors automatically and according to the pre-established programs, that can be chosen by the operator.

10 (previously presented). A non invasive method of measuring three-dimensional distribution of temperature of dielectric objects using an instrument of the type according to claim 2 comprising the steps of reconstructing point temperatures equations, and expressing said temperature

distribution through Fridgolm integrals, said three dimensional temperature distribution being based upon models linking emission intensities and said temperature distribution through said Fridgolm integrals.

11 (previously amended). A non invasive method of measuring three-dimensional distribution of temperature of dielectric objects using an instrument of the type according to claim 3 comprising the steps of reconstructing point temperatures using Rayleigh-Jeans equations, and expressing said temperature distribution through Fridgolm integrals , said three dimensional temperature distribution being based upon models linking emission intensities and said temperature distribution through said Fridgolm integrals.

12 (previously presented). A non invasive method of measuring three-dimensional distribution of temperature of dielectric objects using an instrument of the type according to claim 4 comprising the steps of reconstructing point temperatures using Rayleigh-Jeans equations, and expressing said temperature distribution through Fridgolm integrals , said three dimensional temperature distribution being based upon models linking emission intensities and said temperature distribution through said Fridgolm integrals.

13 (new). Instrument for non invasive measurement of a three-dimensional distribution of temperatures of dielectric objects, the instrument comprising sensors to determine the electromagnetic heat emission power data in a frequency range between radio wave radiation and infrared radiation, said sensors being mounted on supports, said supports being adjustable and movable in space, said sensors being positionable along pre-established directions to determine said three dimensional distribution of temperature, said instrument including a data storage and calculation system

having an interface with said sensors, said electromagnetic heat emission power data measured by said sensors being sent through said interface to said data storage and calculation system, said data storage and calculation system producing as output a three-dimensional map of said temperature distribution.